



Glencoe Transportation Study

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- Appendix A: Highway 212 Intersection Control Evaluation (ICE) Reports
- Appendix B: Highway 22 Route Evaluation
- Appendix C: Roadway Ownership Evaluation
- Appendix D: Agency Support

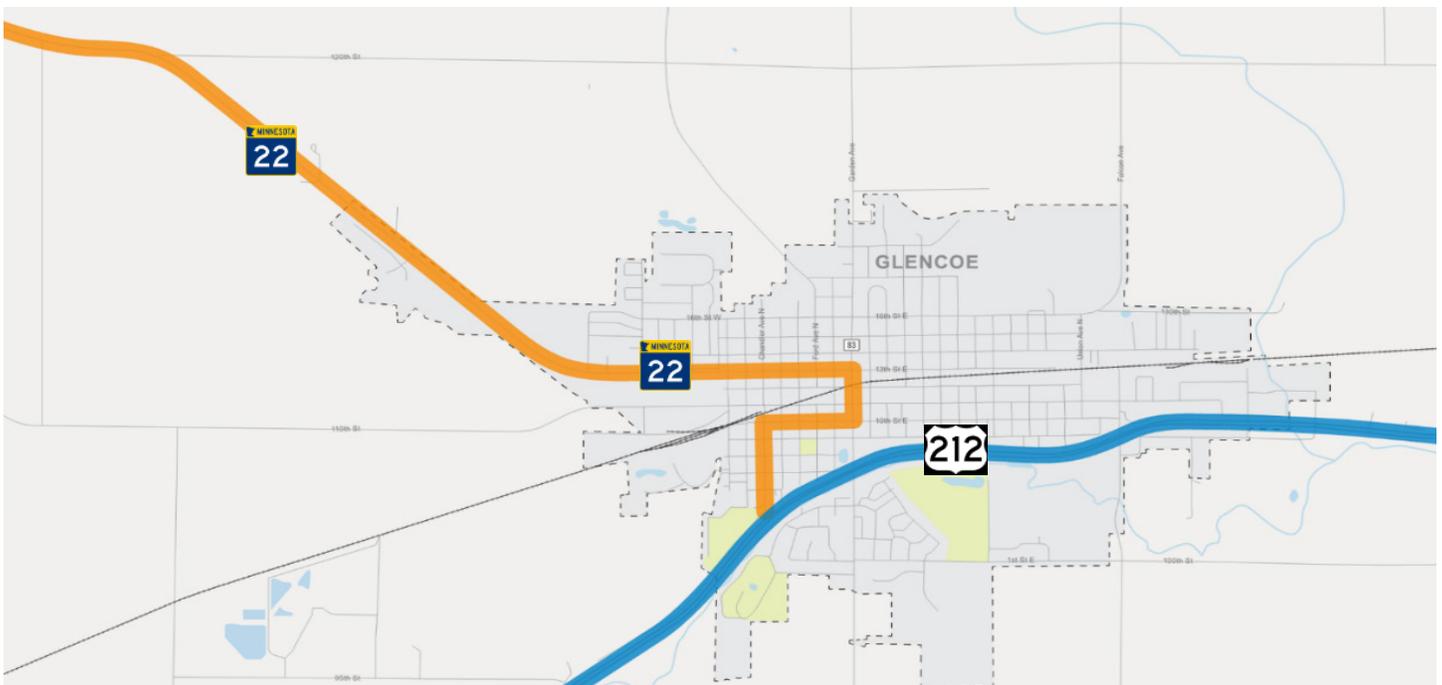


Figure 1: Study Corridors

Introduction

The Minnesota Department of Transportation (MnDOT), the City of Glencoe and McLeod County have partnered to improve the safety of intersections along Highway (Hwy) 212 and Hwy 22 (see Figure 1), and to look at options for Hwy 22 in the Glencoe area. There have been several planning and preliminary engineering studies completed in the Glencoe area since the late 1990s. The latest report, the Glencoe Transportation Partnership Study, was completed in 2003 and developed a coordinated transportation system plan for the Glencoe area amongst State, County and City interests. At the time, it was anticipated there would be unprecedented growth in the Glencoe area and there would be a need for major transportation system improvements over the following 20 years. The study made recommendations for specific projects including interchanges along Hwy 212 and the potential realignment of Hwy 22.

Since the completion of the 2003 study, much of the development projected for Glencoe did not occur as planned, due to larger economic trends across Minnesota and the nation. Additionally, funding realities for state and local transportation funding have made preservation of the existing system the focus of transportation dollars. Therefore, some of the project recommendations in the

2003 study, such as interchanges at every intersection, are no longer feasible given the current transportation funding realities. The purpose of this study is to update previous plans to reflect the current and future transportation system needs and to develop and to identify a new set of recommendations from which to base future transportation investments.

About the Study

This planning study is the first step in addressing safety concerns on Hwy 212 and looking at options and considering the feasibility of changes to the route of Hwy 22 in Glencoe. Hwy 212 serves as a mobility corridor in the region with four key intersections serving the Glencoe community. Hwy 22, after passing through downtown Glencoe, connects to Hwy 212 at one of these key intersections (Chandler Ave). Robust community engagement was conducted throughout the study. Efforts were carried out to gather input on issues and concerns regarding Hwy 212 and Hwy 22. Hwy 212 safety improvement alternatives and Hwy 22 feasible routes were presented to residents, business owners, local and regional roadway users, elected officials and stakeholders.

Study Goals

The study partners identified study goals, as shown in Figure 2, based on issues and needs for both Hwy 212 and Hwy 22. These goals, which were supported by community input, guided the overall study process.

Figure 2: Study Goals

- 1 Improve the safety of intersections along Hwy 212 and Hwy 22
- 2 Improve safety for pedestrians and bicyclists along Hwy 212 and Hwy 22
- 3 Develop a plan that outlines access along Hwy 212 and Hwy 22
- 4 Study the current route of Hwy 22

Details regarding the technical work completed and input from the community as they relate to these goals are included in later sections of this report.

Study Process

The study was conducted in three phases as shown in Figure 3. Study oversight and decision-making was led by a Project Management Team (PMT) consisting of the study partners, the City of Glencoe, McLeod County and MnDOT. This team was supported by a Technical Management Team (TMT). The TMT included leaders of MnDOT's District 8 functional staff and staff from both the City of Glencoe and McLeod County.

Figure 3: Study Process



Phase 1 included verifying the purpose and need for conducting the study and identification of issues and priorities. This included reviewing previous area studies, collecting traffic counts and conducting an evaluation of the area's crash history and land use and development plan. An important outcome of this first phase was to understand how both Hwy 212 and Hwy 22 function today and understand future changes that may impact the roadways. Study goals were also established in this first phase.

Phase 2 included identifying several potential intersection control and access alternatives for key intersections along Hwy 212 and potential re-route options for Hwy 22 through and around Glencoe. Each intersection alternative was evaluated to determine its effectiveness in addressing current issues and concerns, not only for cars and trucks but also for walkers and bikers. Routes for Hwy 22 were evaluated relative to the identified needs of the roadway and to potential environmental risks. Improvements developed for both roadways were a result of public and stakeholder input received, the engineering analyses completed, and the history of previous transportation studies completed for the Glencoe community.

Phase 3 included identifying the recommended alternatives for Hwy 212 along with next steps relative to pursuing future funding. Re-routing Hwy 22 is a long-range goal for the Glencoe community – this phase identified potential routes for Hwy 22 and how these can be incorporated into a future environmental review. Currently, there is no funding to complete the environmental review.

Engaging the Community

Robust community engagement was conducted throughout the Glencoe Transportation Study. Both in-person and online opportunities were available for the community to ask questions and provide input. Our “Promise to the Public” guided our overall engagement efforts.

Promise to the Public

MnDOT, the City of Glencoe and McLeod County will work with the greater Glencoe community to ensure that the community’s concerns and aspirations are directly reflected in the alternatives developed as part of the Glencoe Transportation Study and to provide feedback on how the community influenced recommendations and decisions.

Opportunities for Public Input

Below is an overview of the opportunities provided for public input:

Glencoe Transportation Study Stakeholder Workshop

MnDOT, the City of Glencoe and McLeod County have partnered to improve the safety of intersections along Highway 212 and Highway 22 and to improve connections for Highway 22 in the Glencoe area.

- The Glencoe Transportation Study has four goals:
1. Improve the safety of intersections along Highway 212 and Highway 22
 2. Improve safety for pedestrians and bicyclists
 3. Develop a plan that outlines appropriate access along Highway 212 and Highway 22
 4. Study the current route of Highway 22

As part of the Glencoe Transportation Study a stakeholder workshop is being held to gather feedback from community members.

You're Invited

Glencoe Transportation Study Stakeholder Workshop
Wednesday, December 19
11:30-1 pm
Glencoe City Office (1107 11th St. East) - South Ballroom
Lunch will be provided
RSVP to mandi.lighthizer-schmidt@state.mn.us
by Friday, December 14

Community members will be given the discussion questions a few days before the workshop. Discussion will be held at each table and reported back to the full group. All feedback will be shared and incorporated into the transportation study process. A large community event and on-line feedback tool are being planned for January 2019.

If you have any questions, please feel free to contact Mandi Lighthizer-Schmidt, MnDOT District 8 at 320-214-6426 or via email at mandi.lighthizer-schmidt@state.mn.us.



Stakeholder Workshop #1

- December 18, 2018
- 45 Attendees

County Board Presentation

- October 2, 2018

City Council Presentation

- November 5, 2018



Community Open House Event #1

- February 26, 2019
- 145 Attendees



Stakeholder Workshop #2

- May 14, 2019
- 47 Attendees



Community Survey #1

- February 2019
- 213 respondents

Community Survey #2

- May 2019
- 805 respondents



Community Open House Event #2

- September 23, 2019
- 110 Attendees

Stakeholder Workshops

Stakeholder workshops were held at key points during the study with four main stakeholder groups. The first meeting included a presentation followed by a facilitated discussion regarding issues, concerns and priorities, and to brainstorm ideas for both Hwy 212 and Hwy 22. The second meeting provided a presentation on preliminary recommendations for Hwy 212 safety improvements and information regarding potential routes for Hwy 22. This meeting provided an interactive real-time survey that included questions regarding their level of support for the recommendations. Feedback from this meeting was important because it shaped the survey that was rolled-out to the overall community.

Community Open House Events

Two community open houses were held at the Glencoe City Center throughout the study. The purpose was to share information about the study face-to-face with community members and ask for their experiences and feedback based on the information presented. All informational materials shared at the events were made available on the study website. Study partners were available to help answer questions, address concerns, and collect input from the attendees.

The first public community event held in February 2019 occurred at the beginning of the study. The event served as an opportunity to introduce the study, the partners, and explain how the public would play a role in shaping the final recommendations. Building on input provided at the first stakeholder workshop, this was the first time study partners met with the overall community in-person and allowed for two-way dialogue to occur. Verbal and written feedback were documented with the initial study survey providing a foundation of information to guide the study forward. For community members unable to attend the community event, an online survey was made available which sought similar feedback as the community event, making it possible for community members to provide input in a variety of ways.



The second community event held in September 2019 was the culmination of data collection, analysis, and public engagement efforts. A formal presentation and boards highlighted the analysis of alternatives and recommendations for Hwy 212, and benefits of each. Additional information was provided on potential next steps to fund improvements. The presentation and boards also included potential future routes for Hwy 22 and next steps. Like the first community event, the information presented at this event was also available online for those who could not attend the event in person.

Communications

MnDOT hosted a **study website** (<http://www.dot.state.mn.us/d8/projects/hwy212hwy22glencoe/>) that contained background information, promotion of upcoming public engagement events, meeting materials, and contact information. Information on “what we heard” throughout the study was also included to report back to the public regarding their input and feedback. Additionally, multiple communication channels were used to notify Glencoe area residents, community members, and regional users about the study’s engagement activities. **Email announcements** were distributed through MnDOT one to two weeks prior to each event. Two **newsletter mailings** were sent out to introduce the study, provide an update about progress, encourage participation in the surveys, and highlight upcoming engagement opportunities. **Social media** was established by MnDOT via a Facebook page. Regular updates were shared, including promotion of upcoming events. MnDOT ran Facebook ads in advance of both open houses. **Press releases** were sent to local media outlets and posted on the MnDOT website prior to the two open houses.

What we Heard

Engagement with the community focused on identifying issues, opportunities, priorities, and soliciting input on improvements that could be supported by the community. Below provides a summary of key points for both Hwy 212 and Hwy 22. Details are described later in the report.

Feedback for Hwy 212

The public was asked which potential Hwy 212 improvements they could support:

- The public expressed support for all proposed safety improvements.
- Roundabouts received the most support, but the public also expressed support for J-turns.

Key Issues Identified



Confusion at intersections



Increased traffic and future growth



Need for walking and biking improvements



Change in speed limits

Feedback for Hwy 22

The public was asked which potential Hwy 22 routes they could support:

- Routes 2, 3, 5 and 7 received support from the community.
- The community expressed their desire for a new Hwy 22 route. Keeping the current route of Hwy 22 was not widely supported.

Key Issues Identified



Confusion about current route of Hwy 22



Truck turning issues



Heavy truck traffic in downtown



Need for walking and biking improvements



Change in speed limits



Need for better signage

Hwy 212 Safety Improvements

As previously noted, Hwy 212 serves as a mobility corridor in the region with four key intersections that serve the Glencoe community. The Chandler Ave (Hwy 22) and Morningside Dr (CR 15) intersections have been identified as having safety concerns within the community. On the east end of town, the Falcon Ave and CR 69 intersections provide full access to Hwy 212, but the intersections do not meet access spacing guidelines. While no safety issues have been currently identified, development on the east end of town will increase traffic levels at these intersections in the future. Additional details are included in the appendices.

Key Needs and Considerations

Hwy 212 and Chandler Ave (Hwy 22)

The Hwy 212 and Chandler Ave (Hwy 22) intersection, as shown in Figure 4, is a T-intersection with side-street stop control and an intersection flashing warning system that was installed in 2017. Hwy 212 is a four-lane divided highway with a posted speed limit of 55 miles per hour (mph) and is functionally classified as a Principal Arterial, meaning it is a mobility corridor with managed access. The current width of the median allows for a two-stage crossing of Hwy 212 to be completed with yield signs in the median (see Figure 5). Chandler Ave (Hwy 22) is a two-lane undivided highway that extends north of the intersection with a posted speed limit of 30 mph and is also functionally classified as a Principal Arterial. The land adjacent to the intersection is primarily used for industrial and commercial purposes. In 2019, McLeod County acquired the Junglaus building just to the north of the intersection for their future county services facility. While to the extent not currently known, it is anticipated this change in use will increase traffic levels at the study intersection.

Figure 4: Hwy 212 and Chandler Ave (Hwy 22) Intersection

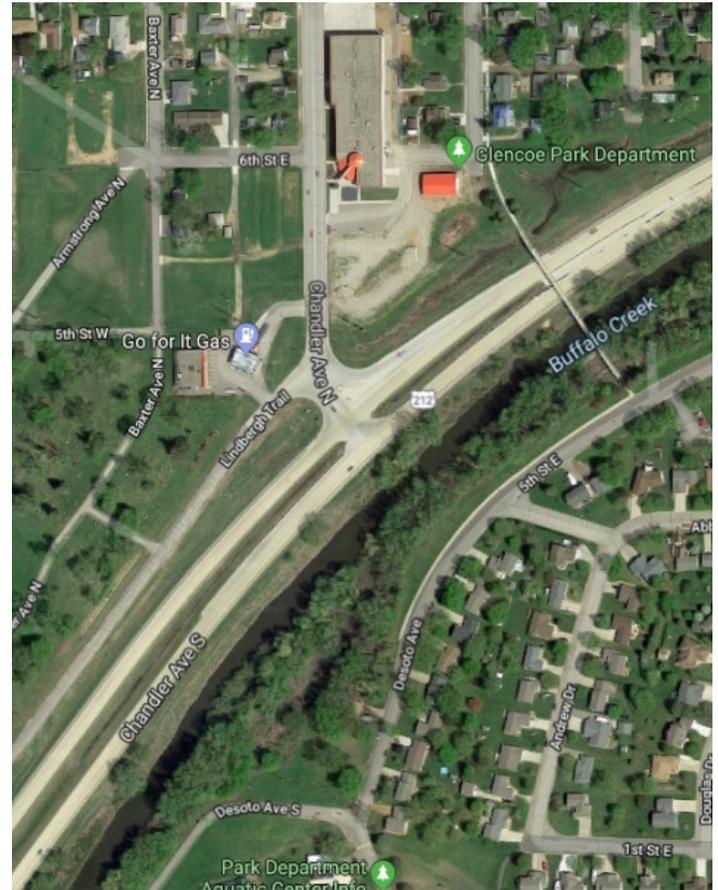


Figure 5: Yield Signs in Median at Hwy 212 and Chandler Ave (Hwy 22)



Ten crashes were reported during the most recent five-year period (2013-2017) of data available. Based on this data the resulting crash rate of 0.69 crashes per million entering vehicles is above the statewide average for similar type of intersections and above the critical crash rate. This indicates a probable safety concern. 80 percent of the crashes reported were angle crashes, which is common for this type of intersection. Six of the 10 reported crashes, including a fatal crash, occurred prior to the installation of the intersection flashing warning system in 2017. Although not included in the results above, we understand there were additional crashes that occurred in 2018. With a solid understanding of the existing issues and deficiencies, and input from the community and study partners, safety improvements were developed with a focus on addressing:

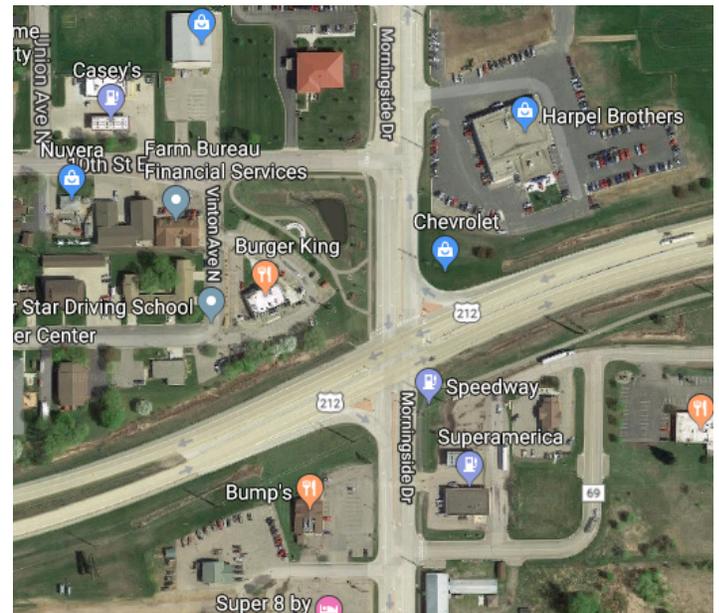
- **Existing crash history.** Crash history includes serious and fatal crashes, with many being angle crashes. The installation of the “ENTERING TRAFFIC / TRAFFIC APPROACHING WHEN FLASHING” flashing warning system has reduced crashes, but there are still crashes occurring.
- **Driver confusion.** Drivers noted they are confused by the flashing warning system and observe drivers often disregarding the warning lights. Further, freight operators noted safety concerns with the wide median with two-stage crossing, causing them to drive through Glencoe to access Hwy 212 at the all-way stop controlled Morningside Dr intersection to the east.
- **Growth.** Future safety concerns with increased traffic and community growth.

Accommodations for walkers and bikers were not considered since there are no current crossings at the intersection. A pedestrian bridge does exist just east of the intersection allowing walkers and bikers to cross over Hwy 212 and the Buffalo Creek, which parallels the highway.

Hwy 212 and Morningside Dr (CR 15)

The Hwy 212 and Morningside Dr (CR 15) intersection, as shown in Figure 6, is a four-way intersection with all-way stop control and flashers on the stop signs. Morningside Dr (CR 15) is a two-lane divided roadway with exclusive turn lanes, a posted speed limit of 30 mph, and is functionally classified as a Minor Arterial. Morningside Dr (CR 15) connects traffic to and from Hwy 212 to access Glencoe on the eastern edge of the city. The land adjacent to the intersection includes primarily commercial properties with residential areas located within a quarter mile of the intersection.

Figure 6: Hwy 212 and Morningside Dr (CR 15) Intersection



Twenty-six crashes were reported during the most recent five-year period of data available (2013-2017). Based on this data the resulting crash rate of 1.00 crashes per million entering vehicles is above the statewide average for

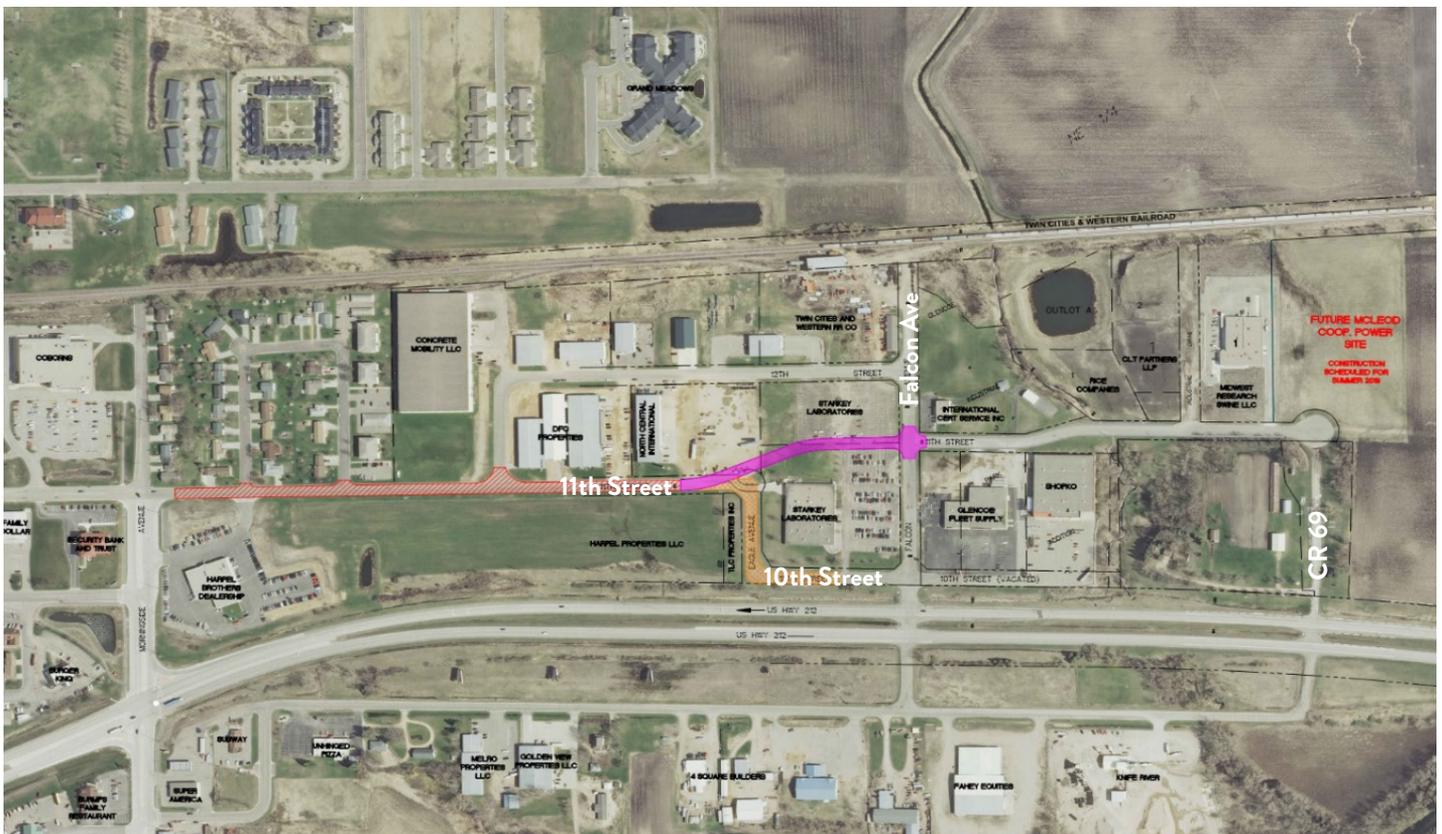
similar type of intersections and above the critical crash rate. This indicates a probable safety concern. 58 percent of the crashes reported were angle crashes. With a solid understanding of the existing issues and deficiencies, and input from the community, alternatives were developed with input from study partners:

- **Existing crash history.** Crash history includes serious crashes, with many being angle crashes.
- **Driver confusion.** Drivers noted they are confused by the number of lanes with all-way stop control noting they aren't sure "who's supposed to go".
- **Need for improved pedestrian and bicycle crossings.** Feedback from the public indicated concerns with the safety of the existing crossings, both crossing Hwy 212 and crossing Morningside Rd.
- **Growth.** Input noted future safety concerns with increased traffic and community growth. Morningside Dr (CR 15) is expected to be extended as part of a McLeod County-led project over the railroad crossing and connecting in with Falcon Ave.

Falcon Ave and CR 69 Intersections with Hwy 212

Crash history was reviewed for both Falcon Ave and CR 69 intersections just east of Morningside Dr (CR 15), as shown in Figure 7. Four crashes were reported at Falcon Ave with one crash at CR 69 during the most recent five-year period (2013-2017) of data available. Based on this data the resulting crash rates for both intersections are within the expected rate for similar types of intersections. All four crashes at Falcon Ave were angle crashes, which is typical for similar intersections. The crash at CR 69 was reported as a runoff the road crash. As previously noted, no safety issues have been currently identified but development on the east end of town will increase traffic levels at these intersections in the future, including the Kwik Trip station that opened in December 2019 and the future extension of 11th Street to the east to better serve the expanding industrial area, which is shown in Figure 7.

Figure 7: Falcon Ave and CR 69 Intersections with Hwy 212



Recommended Improvements

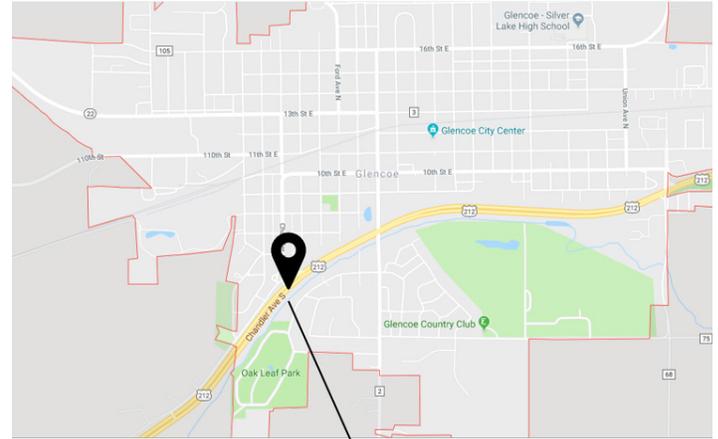
Through technical analysis and public input, the study partners identified recommendations for the Hwy 212 corridor through Glencoe. Additional details are included in the appendices.

Hwy 212 and Chandler Ave (Hwy 22)

Based on the results of the intersection control evaluation completed, and in support of the overall Glencoe Transportation study goals with input from study partners and community, a reduced conflict intersection (i.e., “J-Turn”) is recommended for the intersection of Hwy 212 and Chandler Ave (Hwy 22), as shown in Figure 8. The final recommendation will be dependent on potential funding sources. The following supports this recommendation:

- A J-Turn would accommodate current traffic levels and future traffic levels from the redevelopment of the Jun-claus property.
- A J-Turn would address the safety concerns of the existing intersection since drivers on the minor-road no longer expose themselves to the most common and severest crash type, which is the angle crash.
- A J-Turn would address driver confusion in the median.
- J-Turn would have the greatest benefits per cost and would have the lowest overall cost.
- The J-Turn would retain the free-flow of traffic on Hwy 212, which is desired for a mobility corridor on the west part of town.

Figure 8: Recommendations for Hwy 212 and Chandler Ave (Hwy 22)



Hwy 22 (Chandler Ave)



Construct J-Turn or
No current funding
for construction



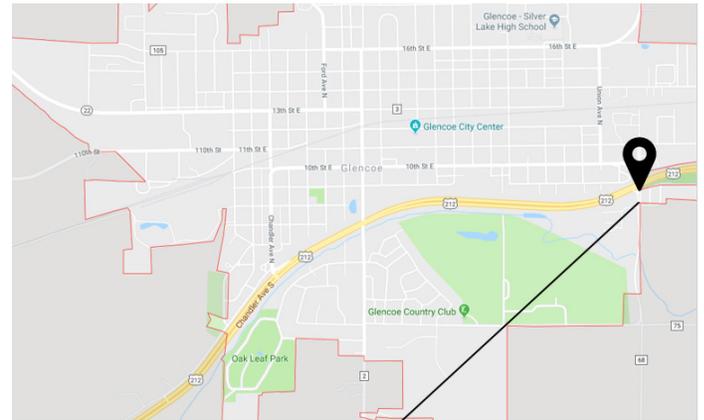
Example J-Turn at Chandler Ave

Hwy 212 and Morningside Dr (CR 15)

Based on the results of the intersection control evaluation completed, and in support of the overall Glencoe Transportation study goals with input from study partners and community, roundabout control is recommended for the intersection of Hwy 212 and Morningside Dr (CR 15) in Glencoe (see Figure 9). The roundabout would initially be built as a single-lane roundabout, but if traffic increases to the projected level the roundabout may need to be expanded to include two lanes in each direction on Hwy 212. The roundabout would also include sidewalks and/or trails and crossings that would be built with the roundabout to facilitate walking and biking movements. The following supports this recommendation:

- Roundabout control would address the existing angle crash issues observed today.
- Roundabout control will benefit walkers and bikers by:
 - Making drivers slow down driving through the intersection.
 - Reducing the distance walkers and bikers need to cross.
 - Raised medians provide a refuge for those crossing.
 - Walkers and bikers only need to look at one direction of traffic at a time.
- Roundabout control would improve mobility compared to current conditions.

Figure 9: Recommendations for Hwy 212 and Morningside Dr (CR 15)

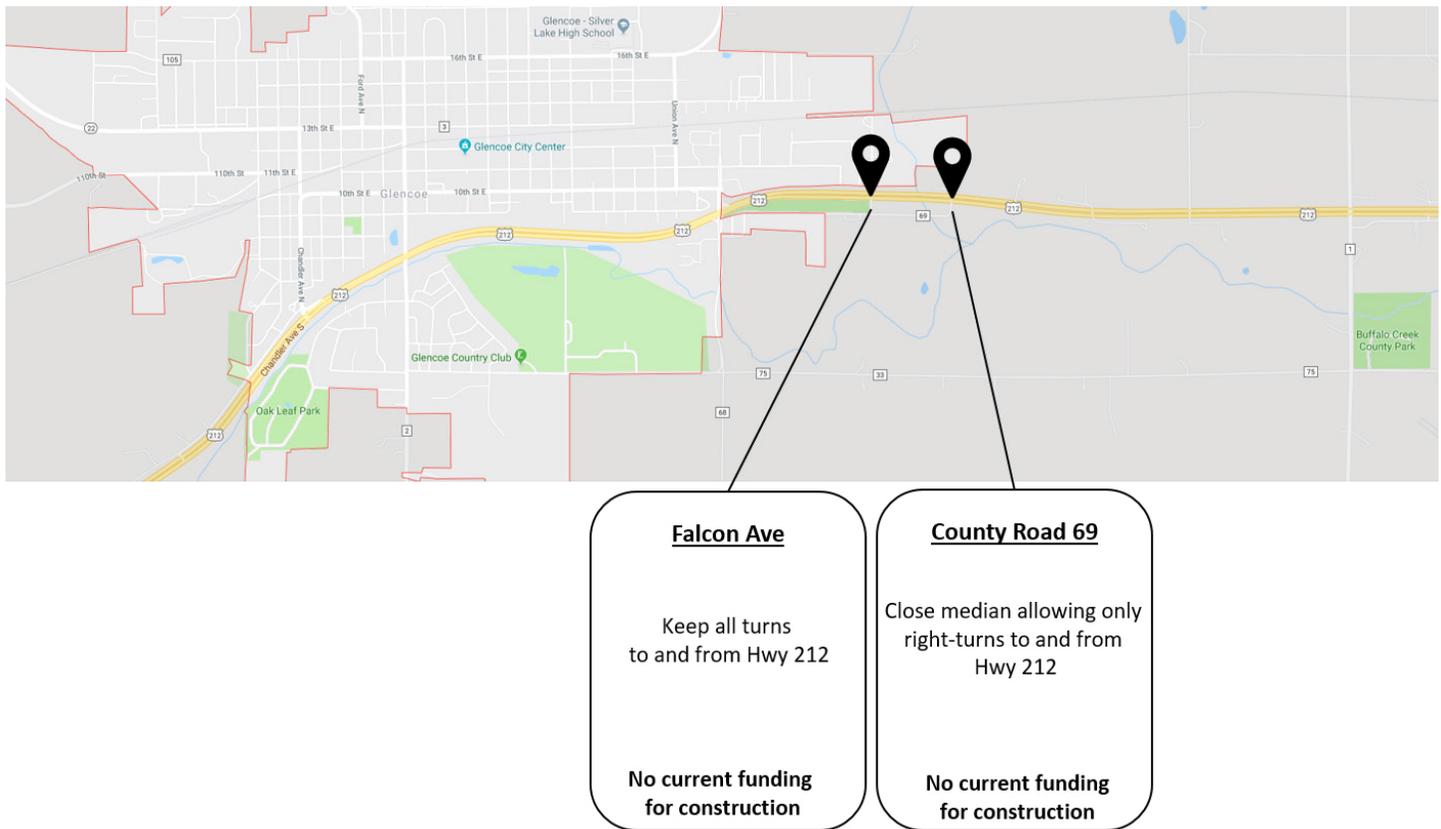


Falcon Ave and CR 69 Intersections with Hwy 212

Based on discussion with study partners it is understood the current distance between the Falcon Ave and CR 69 intersections does not meet MnDOT guidance (i.e., need to be spaced a half-mile apart) for providing full access to Hwy 212. MnDOT's access management guidance exists to reduce congestion and crashes, preserve road capacity, improve travel times, ease movement between destinations and support local economic development.

Input from the City indicated the desire to maintain full access at Falcon Ave to support future development and the extension of 11th Street; therefore, it is recommended by study partners to maintain full access at Falcon Ave and to restrict access at CR 69 by closing the median allowing only right-turns to and from Hwy 212 (see Figure 10). Future plans for access east of Glencoe are included in Appendix A.

Figure 10: Recommendations for Falcon Ave and CR 69 Intersections with Hwy 212



Why we use Roundabouts

The first Minnesota roundabout was constructed in 1995. Since then, close to 200 roundabouts have been built across the state. They have become an increasingly popular intersection type embraced by traffic engineers, communities, and transportation officials. MnDOT's 2017 A Study of the Traffic Safety at Roundabouts in Minnesota looked at the safety performance of roundabouts by comparing the before construction crash rates and the after-construction crash rates and traffic volume data. Overall, roundabouts (see Figure 11) are performing well when looking at safety benefits. Roundabouts in Minnesota have had over an 80% reduction in fatal and serious injury crashes. At the time of this report, there still has not been a multi-vehicle fatality in a roundabout in Minnesota.

Roundabout highlights include:

- **Improved safety** – Roundabouts show an 86% decrease in fatal crashes and a 42% overall decrease in the injury crash rate at intersections.
- **Improved traffic flow** – Roundabouts handle high levels of traffic with less delay than most stop signs or signals.

Figure 11: Roundabouts in Minnesota



Want to learn more about roundabouts in Minnesota?

<https://www.dot.state.mn.us/roundabouts/>

Why we use J-Turns

J-Turns reduce the number of angle crashes by reducing the number of ways that drivers can expose themselves to an angle crash. Based on MnDOT's research and experience, J-Turns have proven to be a very effective tool in accomplishing this. By restricting drivers who approach the 4-lane highway from crossing and turning left (see Figure 12), the angle crash is thereby greatly reduced.

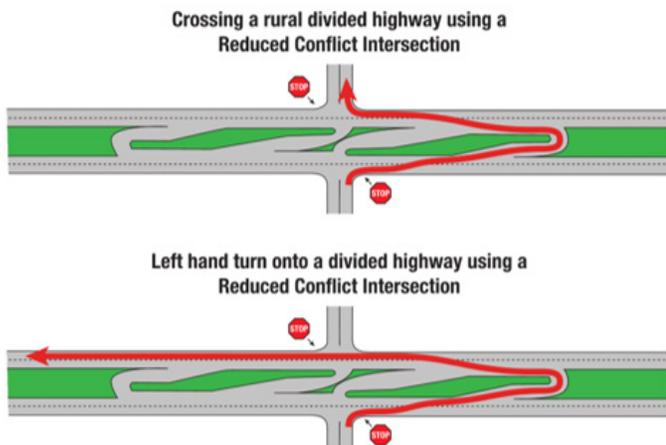
J-Turn highlights include:

- **Improved safety** – Studies show a 70% reduction in fatalities and a 42% reduction in injury crashes where J-Turns are used.
- **Faster to build** – J-Turns can be designed and built in approximately one year. Interchanges typically take 3-5 years.

- **Lower cost** – J-Turns are often less expensive than constructing an intersection with a stop light and are a fraction the cost of building an interchange.
- **Ability to accommodate large vehicles** – large agriculture vehicles and trucks can safely and efficiently navigate J-Turns.

Currently MnDOT has nearly 40 J-Turns installed state-wide with another 50-60 planned in the next 5 years. Recently, a total of six J-Turns were built along the Hwy 65 corridor in the northern Twin Cities metro area with great success. Several have been built on Hwy 23 in Marshall with success as well. MnDOT has witnessed a dramatic reduction in crashes, both in the total number and severity, at newly installed J-Turns. As of now, there has not been a fatality reported at any of MnDOT's J-Turns.

Figure 12: J-Turns in Minnesota



Want to learn more about J-Turns in Minnesota?

<http://www.dot.state.mn.us/roadwork/rci/>

Hwy 22 Route Considerations

The study reviewed the route Hwy 22 takes through Glencoe. Through stakeholder and community engagement, key needs and considerations were identified and prioritized for Hwy 22. Ten potential re-routes for Hwy 22 were then identified. Initial review of the feasibility of the routes reduced the number from ten to four for further consideration and public input.

Key Needs and Considerations

As part of the Glencoe Transportation Study, study partners made a promise to the public to work to ensure that the community's concerns and aspirations were directly reflected in the alternatives developed as part of the transportation study, and to provide feedback on how the community influenced decisions. Engagement with stakeholders and the community identified needs for Hwy 22 through Glencoe. Input was also provided regarding which needs should be prioritized during the evaluation of potential re-routes of Hwy 22.

Community and stakeholder engagement identified priorities – Hwy 22 needs to be a route that:

- Is direct and less confusing.
- Improves overall safety.
- Serves both personal and commercial drivers.
- Reduces truck traffic in town.
- Accommodates future growth on the east side of town.

Engagement also identified the following additional needs – Hwy 22 needs to be a route that:

- Doesn't increase traffic in residential areas.
- Doesn't increase traffic in school zones.
- Minimizes the need to build new roads.
- Improves conditions for walkers and bikers.

Range of Potential Hwy 22 Routes

Based on community and stakeholder input, planning-level engineering analysis, as well as information from previous studies, ten routes were identified for consideration (see Figure 13). Using the priorities identified through engagement, ten routes were reduced to four routes for further consideration and evaluation based on the criteria discussed in Table 1.

Figure 13: Range of Potential Hwy 22 Routes

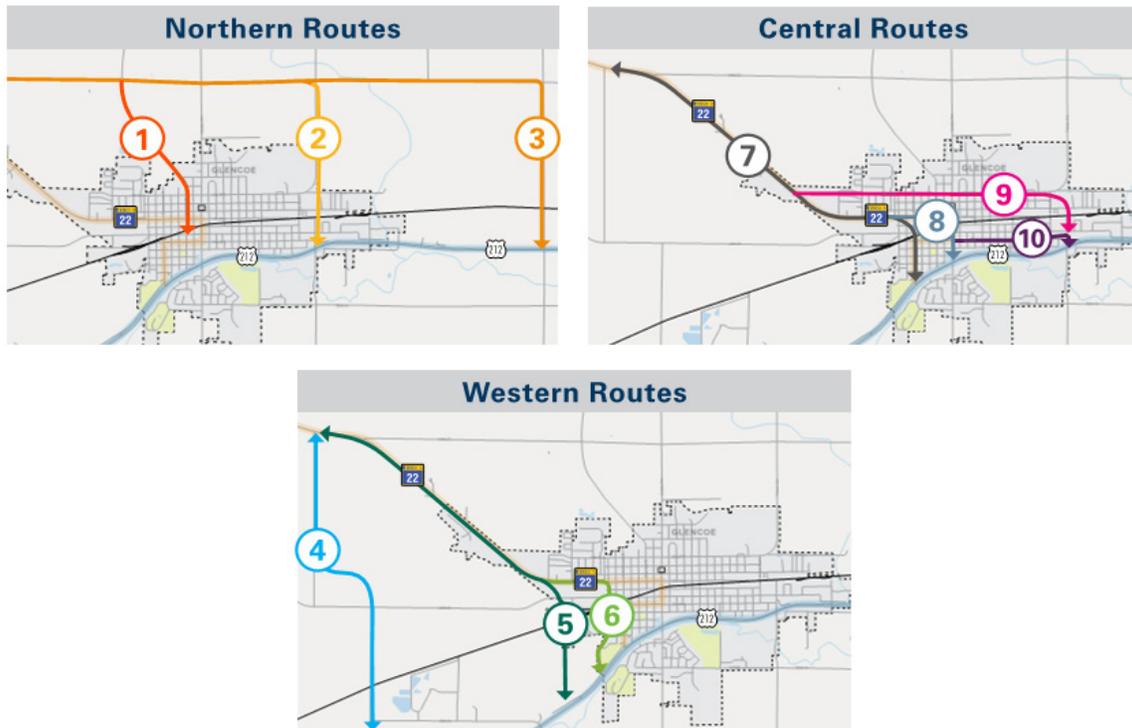


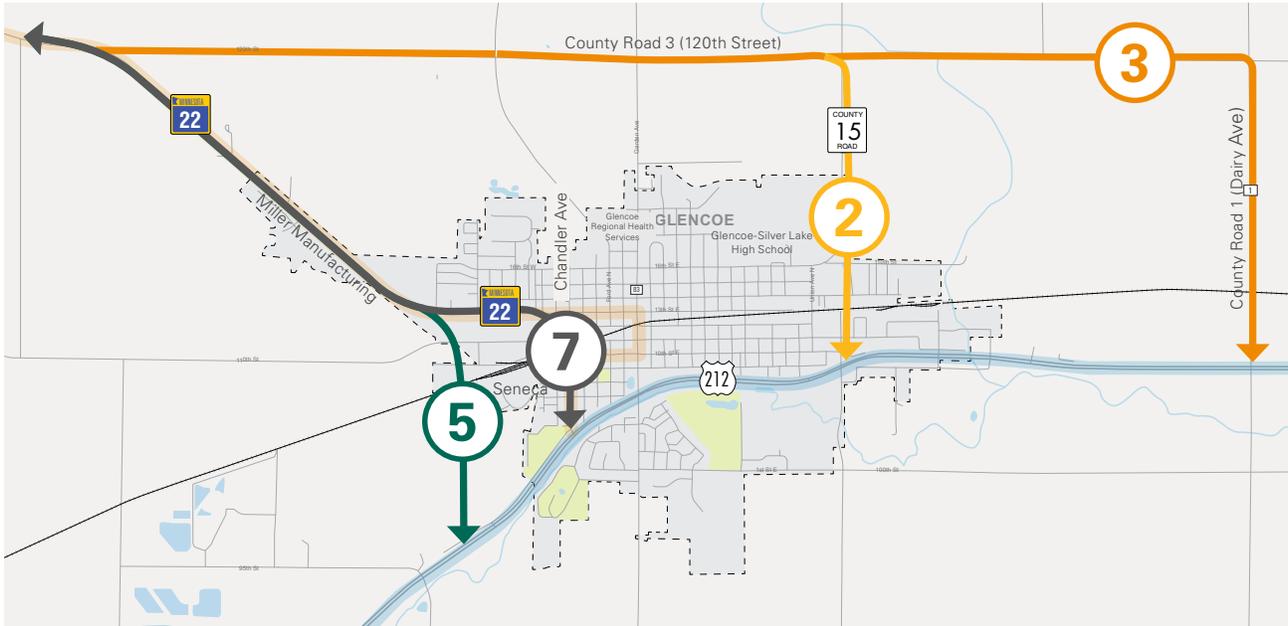
Table 1: Hwy 22 Routes Removed from Further Consideration

Route ① (Northern Route)	Route ④ (Western Route)	Route ⑥ (Western Route)	Route ⑧ (Central Route)	Route ⑨ (Central Route)	Route ⑩ (Central Route)
 			  	 	 
<ul style="list-style-type: none"> Does not reduce truck traffic in town Increases traffic in residential areas 	<ul style="list-style-type: none"> Cost prohibitive Does not serve all users 	<ul style="list-style-type: none"> Increase traffic where manufactures operate facility Safety concerns with crossing three sets of tracks 	<ul style="list-style-type: none"> Does not reduce truck traffic in town Increases traffic where pedestrians and bikers are May require closure of Chandler Avenue intersection at Hwy 212 Cost prohibitive 	<ul style="list-style-type: none"> Does not reduce truck traffic in town Increases traffic in residential areas Increases traffic by school 	<ul style="list-style-type: none"> Does not reduce truck traffic in town Increases traffic in residential areas

Hwy 22 Routes Recommended for Future Environmental Review

Initial review of the feasibility of the routes (see Figure 13) reduced the number from ten to four for further consideration and public input. Routes recommended for future environmental review are shown in Figure 14.

Figure 14: Hwy 22 Routes Recommended for Future Environmental Review



Based on the needs identified for Hwy 22 and how they were prioritized through community and stakeholder engagement, the remaining routes were evaluated to determine if they met the needs (see Table 2).

Table 2: Evaluation of Hwy 22 Routes Under Consideration

Provide a Hwy 22 route that...	No Change	Route 2	Route 3	Route 5	Route 7
Is direct and less confusing		✓	✓	✓	✓
Improves overall safety		✓	✓	✓	✓
Serves both personal and commercial drivers	✓	✓	✓	✓	✓
Reduces truck traffic in town		✓	✓	✓	
Accommodates future growth on the east side of town		✓	✓		
Doesn't increase traffic in residential areas	✓	✓	✓	✓	✓
Doesn't increase traffic in school zones	✓	✓	✓	✓	✓
Minimizes the need to build new roads	✓	✓	✓		✓
Improves conditions for walkers and bikers		✓	✓	✓	✓
Is cost responsible	Minimal Cost	\$\$	\$\$	\$\$\$	\$

It is recommended to review changes in traffic patterns after Morningside Dr is built connecting it with Falcon Ave. This will provide a better understanding of how traffic will change through and around Glencoe.

Potential Impacts and Environmental Risks

While a full environmental review was not completed when evaluating a potential change to the route of Hwy 22, a risk assessment was completed relative to potential impacts, including potential environmental impacts. On-line resources were used to identify locations where there is a risk for an impact. In some cases, the impact was quantified (see Appendix C). Based on the potential for risk, each impact was assigned a risk factor (i.e., low, moderate, high) which is a relative comparison of risk compared to not making any changes to the route. The higher the risk the more likely mitigation will be needed with the project to address the impact, which can impact the overall cost and time frame for the project. The potential risks are summarized in Table 3.

Table 3: Potential Risk for Impacts

Potential Impacts	Route 2	Route 3	Route 5	Route 7
Right-of-Way	Moderate	Moderate	High	Moderate
Drainage	Moderate	Moderate	High	Moderate
Wetlands	Moderate	Low	Low	Low
National Protected Areas (parks, wildlife refuges, waterfowl, scientific and natural areas)	Low	Low	Low	Low
State Protected Areas (water trail, forest, park, trail)	Low	Low	Low	Low
Wildlife Management Areas	Low	Low	High	Low

Considerations for Future Environmental Review

Determining the appropriate level of environmental review is based on the type of project and the potential funding sources. Hwy 22 re-route Option 5 includes more than 1 mile of roadway on new alignment, which would require a mandatory State Environmental Assessment Worksheet (EAW) under Minnesota Rules. The other routes options would not trigger a mandatory State EAW. Changing the route of Hwy 22 would likely require funding beyond state funding so federal-aid funding would provide the most flexibility to meet the overall needs. If there is federal-aid funding, regardless of the route option, then an environmental review under the National Environmental Protection Agency (NEPA) would be required. It is likely Options 2, 3, and 7 could be handled as a Class II action under NEPA (i.e., Categorical Exclusion). Option 5 with the new roadway may be considered a Class III action (i.e., Environmental Assessment/Finding of No Significant Impact); however, this would need to be discussed and agreed-to with the Federal Highway Administration (FHWA) and MnDOT. Further, Option 5 could also be handled with a Categorical Exclusion. Regardless of where the funding comes from (i.e., federal, state, local), there would still be the need to address permitting (i.e., Section 404 permitting from the United States Army Corps of Engineers).

Summary of Routes

Table 4 summarizes the pros and cons for the four Hwy 22 routes under consideration for future environmental work.

Table 4: Summary of Routes

Route	Pros	Cons	Assumptions
Route 5 (New Western Alignment)	<ul style="list-style-type: none"> Route is direct New roadway allows for geometry that accommodates freight Route reduces truck traffic in town 	<ul style="list-style-type: none"> Route is expensive Route has major property impacts Many environmental risks Introduces a new at grade railroad crossing Route bypasses Glencoe The process to construct this option is more complicated (i.e. longer timelines, permitting risks, more costly, etc.) Adds new intersection with Hwy 212 Adds new roadway mileage to the system Doesn't accommodate growth on the east side of Glencoe This option could not be implemented quickly due to cost, complexity and risk 	<ul style="list-style-type: none"> Wetland impacts are anticipated At grade railroad crossing assumed for basis of cost New intersection at Hwy 212 may cause Chandler intersection to be modified or closed
Route 7 (Using Chandler)	<ul style="list-style-type: none"> Route is direct Route uses existing roadways 	<ul style="list-style-type: none"> Route is expensive Truck turning movements may still be difficult Keeps truck traffic in town Doesn't accommodate growth on the east side of town This route could not be implemented quickly due to cost, risk and complexity Route requires some property impacts 	<ul style="list-style-type: none"> City street portions would be reconstructed At grade RR crossing assumed for basis of cost The 10th St. & Chandler Ave. intersection would be reconfigured
Route 2 (Using CR 3 and 15/Morningside)	<ul style="list-style-type: none"> Route is direct Route uses existing roadways Route is cost effective Route would accommodate growth on the east side of town Route reduces truck traffic in town 	<ul style="list-style-type: none"> Route bypasses Glencoe Route is slightly longer than existing route (although would likely save travel time) 	<ul style="list-style-type: none"> Route would utilize existing County Roads – wouldn't upgrade to meet MnDOT standards right away, as the roadway is close to MnDOT standards At grade railroad crossing assumed for basis of cost Improvements at intersections would be made (new intersection controls, turn lanes, etc.) The Morningside/Hwy 212 intersection would be improved
Route 3 (Using CR 3 and CR 1)	<ul style="list-style-type: none"> Route is direct Route uses existing roadways Route is cost effective Route would accommodate growth on the east side of town Reduces truck traffic in town 	<ul style="list-style-type: none"> Route is slightly longer than existing route (although would likely save travel time) Route bypasses Glencoe 	<ul style="list-style-type: none"> Route would utilize existing County Roads – wouldn't upgrade to meet MnDOT standards right away, as the roadway is close to MnDOT standards At grade railroad crossing assumed for basis of cost Improvements at intersections would be made (new intersection controls, turn lanes, etc.) The CR 1/Hwy 212 intersection will be a J-turn
Do Nothing	<ul style="list-style-type: none"> Doing nothing doesn't require additional funding Route uses existing roadways Route keeps traffic exposed to downtown and truck traffic in town 	<ul style="list-style-type: none"> Route is not direct and is confusing Truck turning is difficult and turns are numerous Truck traffic goes through downtown Drivers use other routes, putting highway traffic stress on local streets 	<ul style="list-style-type: none"> Improvements at the Hwy 22 (Chandler Ave.)/ Hwy 212 intersection would still be made Planned mill and overlay project on existing route would improve sidewalks

Roadway Ownership Changes

As part of the transportation study, the ownership of local roadways was reviewed. The core philosophy is that managing the roadway should be closely aligned with who it serves and the agency best suited to maintain it. This helps minimize the financial gap that agencies are facing related to preserving roadways long-term. Adjusting the size of roadway system by transferring mileage from one agency ownership to other agencies can reduce long-term preservation costs.

Existing and planned future roadways were considered by the study partners. Both were reviewed relative to today's conditions, as well as what ownership changes could occur if a new route for Hwy 22 is funded in the future. The process to review local roadway ownership begins with the affected agencies agreeing to which roadways should be considered. For the Glencoe Transportation Study, the following process was followed:

1. Existing roadway ownership was identified and mapped. This visually represented whether roadways were owned and maintained by either MnDOT, McLeod County or the City of Glencoe, along with how the roadway receives funding assistance.
2. Existing data was collected. This included reviewing existing traffic levels along the roadways and their

current functional classification, which identifies the intended "function" of the roadway (i.e., promote faster speeds with little access compared to slower speeds with more access).

3. Ownership framework was identified by the study partners. This exercise created a list of roadways to be reviewed with the study based on recent changes, planned connections and future desires.
4. Study partners agreed-to the influence of Hwy 22. Since funding has not been identified for changing the route Hwy 22 takes through Glencoe it was determined that all Hwy 22 route options should be reviewed.
5. "Base Conditions" were evaluated. This included evaluating roadway ownership changes assuming no changes to the route of Hwy 22.
6. Hwy 22 routes were evaluated. This included evaluating additional roadway ownership changes that could occur for each of the Hwy 22, in addition to what was recommended with the "Base Conditions".
7. Roadway upgrades and costs were determined. Potential upgrades, including costs, needed to make the roadway ownership changes were determined.

Following the review of roadway ownership, next steps were identified. The details to support the review completed are included in Appendix D. Figure 15 illustrates the roadway ownership changes considered for the "Base Conditions".

Figure 15: Roadway Ownership Changes Considered for the Base Conditions



Next Steps

As previously noted, this planning study is the first step in addressing safety concerns on Hwy 212 and looking at options and considering the feasibility of changes to the route of Hwy 22 in Glencoe. MnDOT and its partners – the City of Glencoe and McLeod County – are committed to working together to implement the recommendations identified in this study. Depending on specific projects initiated, the appropriate agency will take the lead on pursuing funding and delivering the project. Public and stakeholder engagement, as well as education on improvements, will continue in the future as improvements are designed and implemented.

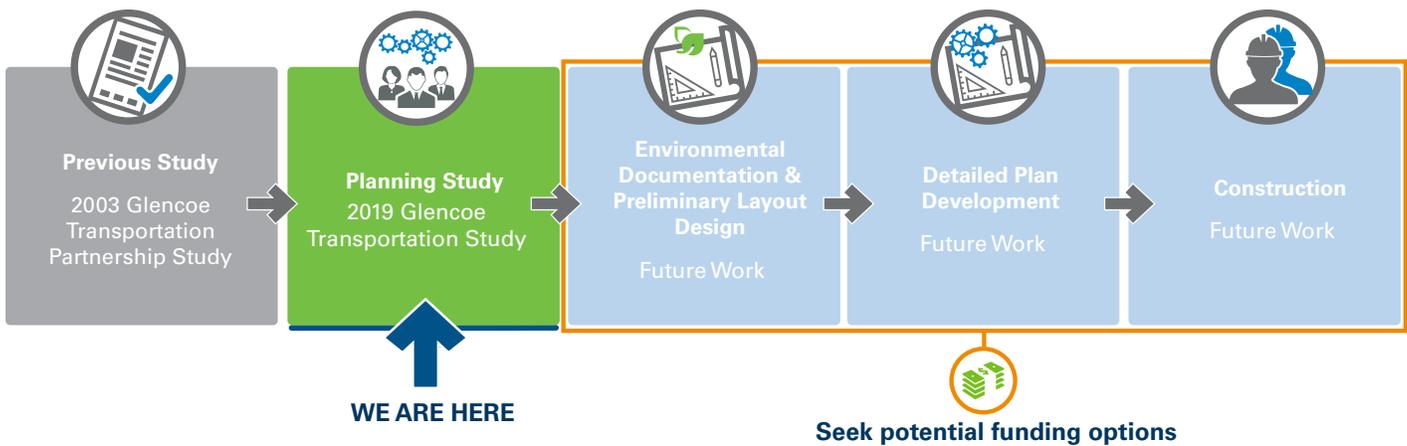
Hwy 212 Safety Improvements

This study, as shown in Figure 16, can be used to apply for safety funding for recommended Hwy 212 safety improvements and assist the City of Glencoe and McLeod County in long-term transportation decision making. Po-

tential funding for Hwy 212 improvements includes HSIP funds, which can be used for safety projects that are consistent with a State’s strategic highway safety plan (Minnesota SHSP). The purpose of HSIP is to fund projects that significantly reduce fatalities and serious injuries on public roads.

Completing this planning effort allows the study partners to develop a detailed project scope and schedule. Design and construction can take place once funding has been identified and secured, and the appropriate level of environmental review has been completed. The environmental review can only be completed when funding is identified for design and construction. Implementing major infrastructure projects take time – it typically takes approximately 2 to 5 years to complete this process of developing and delivering a project. Long-term, recommendations for access locations along Hwy 212 can be incorporated into City and County plans.

Figure 16: Next Steps for Hwy 212

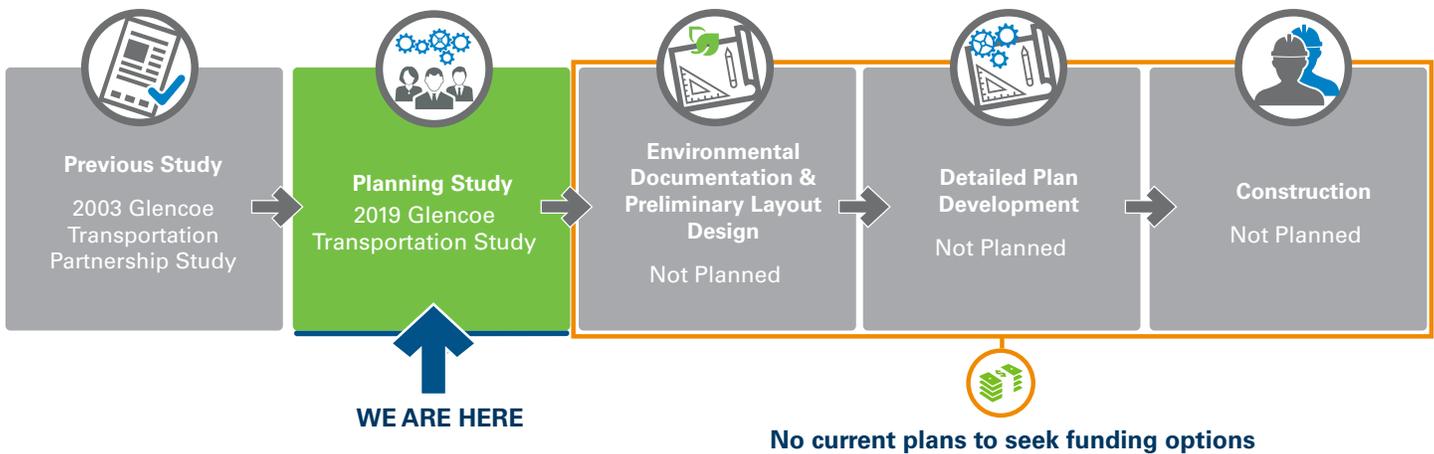


Hwy 22 Route Considerations

Re-routing Hwy 22 is a long-range goal for the Glencoe community. Further, study partners received a letter of support (see Appendix E) from neighboring Hutchinson supporting action on next steps for Hwy 22 as this corridor is an important regional connection for Hutchinson. The next step in the Hwy 22 route discussion, as shown in Figure 17, is to secure funding to complete an environmental assessment, which is required by the federal government to select a “preferred alternative”. In addition to securing funding to complete the federally required environmental assessment, funding for preliminary design and construction would need to be obtained. Currently, there is no funding to complete the environmental assessment, preliminary design or construction.

While this planning study cannot and did not identify a “preferred alternative” for a re-route of Hwy 22, if study partners pursue and secure federal-aid funding for the design and construction of a route change, the environmental assessment can build on the work documented in this study. The identified feasible route alternatives would require a rigorous environmental review before identifying a “preferred alternative”. Regardless of where the funding comes from (i.e., federal, state, local), permitting (e.g., Section 404 permitting from the US Army Corps of Engineers) will need to be addressed as part of a Hwy 22 project.

Figure 17: Next Steps for Hwy 22



Funding Considerations

MnDOT District 8 has a fiscally constrained 4-year program of projects and a 10-year plan of projects. These plans only include projects that MnDOT can reasonably be expected to construct in a given year based on the projected revenues it predicts to receive. Projects beyond what MnDOT can reasonably expect to fund cannot be included in these fiscally constrained plans.

Currently a Hwy 22 re-route project is not included in either the District's programmed or planned projects. Nor are safety improvements for intersections along Hwy 212. Given the current funding constraints and limited funding, the priority of MnDOT and many transportation authorities across Minnesota and the nation is to preserve the existing system and to improve safety. Due to MnDOT's limited funding, new roadway, new alignment and expansion projects are not considered high priority projects.

Given these realities, funding for intersection safety improvements is the highest priority of this study and funding for improvements along Hwy 212 will be pursued by MnDOT District 8 for Highway Safety Improvement Program (HSIP) funding. However, currently, MnDOT District 8 is not able to be able to seek funding for a Hwy 22 re-route. A goal of this study was to determine what was feasible for a new Hwy 22 route and with more information known, local partners could be in a better position to pursue non-traditional funding sources.



Additionally, intersection safety improvements can be made relatively quickly after funding is secured. A re-route of Hwy 22, however, is a much more complex project that requires more extensive environmental work before project development and design can begin. Currently, MnDOT does not have any funding available to complete the environmental and project development work, as it's more extensive than a normal project. Nor does MnDOT have funding available for construction for a Hwy 22 re-route. Another limitation MnDOT has is that FHWA does not allow states to work on many projects of this extensive nature until construction funding is secured. This is to ensure that limited project development resources are going toward projects that will be built in the near future and not to speculative projects.

Appendix A: Highway 212 Intersection Control Evaluation (ICE) Reports

Appendix B: Highway 22 Route Evaluation

Appendix C: Roadway Ownership Evaluation

Appendix D: Agency Support